

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of

Andrew M. Spencer

Application No. 10/689,157

Filed: October 20, 2003

For: Removable Information Storage
Device that Includes a Master
Encryption Key and Encryption Keys

Group Art Unit: 2438

Examiner: Truong, Thanhnga B.

Confirmation No.: 9457

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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Sir:

This is a Reply Brief under Rule 41.41 (37 C.F.R) in response to the Examiner's Answer of June 15, 2010 (the "Examiner's Answer" or the "Answer"). In Section 10, the Answer contains a response to some of the arguments made in Appellant's brief. Appellant now responds to the Examiner's Answer as follows.

Status of Claims

Claims 27 and 30 have been previously cancelled without prejudice or disclaimer.

Claims 16-26 have been withdrawn from consideration under the imposition of a previous Restriction Requirement.

Claims 1-15 and 28-29 are pending in the application and stand finally rejected.

Accordingly, Appellant appeals from the final rejection of claims 1-15 and 28-29, which claims are presented in the Appendix.

Grounds of Rejection to be Reviewed on Appeal

The final Office Action raised the following grounds of rejection.

(1) Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,159,182 to Eisele (“Eisele”).

(2) Claims 2-15 and 28-29 were rejected under 35 U.S.C. § 102(b) as anticipated by Eisele, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Eisele.

Accordingly, Appellant has requested review of each of these grounds of rejection in the present appeal.

VII. Argument

(1) Claim 1 is patentable over Eisele:

In the present application, independent claim 1 recites:

A removable information storage device suitable for use with a host, comprising:
a non-volatile memory *configured to store a master encryption key*; and
a non-volatile magnetic memory *configured to store encryption keys which have been encrypted using the master encryption key and to store data which has been encrypted using the encryption keys.*
(Emphasis added).

By contrast, Eisele is directed to a storage device that includes both a floppy disk-type magnetic memory medium (7) and an integrated circuit (2) that interacts with non-magnetic, nonvolatile storage memory (9). (*E.g.*, Eisele, col. 4 lines 6, 40; col. 5 lines 20-24; Figs. 2, 3, 8). As noted by the Action, Eisele teaches that either or both of the magnetic memory medium (7) and the non-magnetic, nonvolatile storage memory (9) can store “one or more cryptographic algorithms, secret codes etc. in such a way that they cannot be reproduced.” (Eisele, col. 5 lines 20-30; *see* Action, p. 5).

Appellant has already given several instances of subject matter taught in claim 1 that is not present in Eisele. (*See* Appellant’s Brief of Mar. 29, 2010, pp. 11-14). For example, Appellant has noted that Eisele fails to teach or suggest “a non-volatile magnetic memory configured to store encryption keys which have been encrypted using a master key.” (Claim 1; *see id.*). In response to this position, the Examiner cites to Figure 3 of Eisele, asserting that because this Figure teaches “a non-volatile memory” and “a non-volatile magnetic memory,” that “Eisele precisely teaches the use of the two different memories to store encryption keys” and that “it is a very common standard in the art that a memory and/or a storage media can configure [sic] to store not only encryption keys or master encryption key [sic], but it also can

hold/store any kind of content without power being applied.” (Answer, p. 13). Following this line of thought, the Examiner cites again to Eisele’s teaching that “[i]n order to use any of the elements as an encryption/decryption machine, it is necessary to load the element’s memory with one or more cryptographic algorithms, secret codes etc. in such a way that they cannot be reproduced.” (Action, p. 13) (quoting Eisele, col. 5 lines 20-24).

It will be readily apparent to one reading the Answer that the Examiner has still failed to identify anywhere in Eisele that teaches the use of different types of encryption keys, or the use of a “master key” to encrypt other “encryption keys.” (Claim 1). Again, Eisele does not teach or suggest this subject matter anywhere. At best, the Examiner has shown that the device of Eisele teaches hardware capable of storing the different keys recited in claim 1, but mere possibilities are insufficient to establish anticipation. *Ex Parte Levy*, 17 USPQ2d 1461, 1464 (BPAI 1990) (“Inherency may not be established by probabilities or possibilities.”); M.P.E.P. § 2112.

Appellant’s Brief also points out that Eisele also fails to teach storing the master encryption key on one of the storage media and the other encryption keys on the other of the storage media. (Appellant’s Brief of Mar. 29, 2010, p. 12). In response, the Answer cites again to Eisele’s teaching of two separate non-volatile memories in a storage device and the possibility to use the elements in the storage device of Eisele as an “encryption/decryption machine.” (Answer, p. 11) (citing to Eisele, Fig. 3 and col. 5 lines 20-24). It will be readily apparent that Eisele never teaches or suggests in these cited portions or anywhere else that an encryption key of one type is stored on one non-volatile memory and that encryption keys of another type are stored on another type of memory. (*See* claim 1). By asserting otherwise, the Examiner is unfairly reading subject matter from Eisele that plainly does not exist.

Additionally, the Answer asserts that by interpreting the “non-volatile memory” and the “non-volatile magnetic memory” as separate memories, Appellant has “reparaphrased the above language that does not even recite [sic] in the original claim 1, which could construe new matter” (Answer, p. 11). Appellant respectfully disagrees. A claim must be construed according to how one of ordinary skill in the art would interpret the claim in view of the specification and the prosecution history of the application. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80 (Fed. Cir. 1995) (aff’d 116 S.Ct. 1384).

Appellant respectfully submits that one having ordinary skill in the art would interpret the separate recitation of “a non-volatile memory configured to store a master encryption key” and a “non-volatile magnetic memory configured to store encryption keys which have been encrypted using the master encryption key and to store data which has been encrypted using the encryption keys,” as requiring two separate memory devices. (Claim 1). This conclusion is supported by the specification, which only teaches embodiments in which the “master encryption key” and the “encryption keys which have been encrypted using the master encryption key” are stored on separate memory elements. (*See, e.g.*, Appellant’s Specification, Figs. 1, 12, p. 4 line 30 to p. 6 line 2, p. 21 lines 8-10). Furthermore, the prosecution history of claim 1 clearly favors this construction of claim 1. (*See, e.g.*, Appellant’s paper of July 29, 2009, p. 9; Appellant’s Brief of March 29, 2010, pp. 12-13).

Again, “[a] claim is anticipated [under 35 U.S.C. § 102] only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal*, 814 F.2d at 631, 2 U.S.P.Q.2d at 1053; *see Verisign*, 545 F.3d at 1371, 88 U.S.P.Q.2d at 1759; M.P.E.P. § 2131. Thus, Eisele cannot anticipate claim 1 because, for the above reasons, Eisele fails to teach or suggest all of the subject matter present in claim 1. Because the Office has not met its burden to demonstrate the *prima facie*

unpatentability of claim 1, the rejection of claim 1 and its dependent claims based on Eisele should not be sustained.

(2) Claims 2-15 and 28-29 are patentable over Eisele:

The rejection of dependent claims 2-15, independent claim 28, and dependent claim 30 is respectfully traversed and should not be sustained for at least the same reasons given above in favor of the patentability of independent claim 1 over Eisele, and for the additional reasons given in Appellant's Brief of March 29, 2010.

Additionally, Appellant responds to arguments made in the Examiner's Answer with regard to this rejection as follows.

Claim 2

Claim 2 recites "an encryption and decryption engine configured to encrypt and decrypt the encryption keys using the master encryption key and to encrypt and decrypt the data using one or more of the encryption keys." Appellant's Brief of March 29, 2010 presents the position that Eisele does not teach or suggest such an encryption and decryption engine. (Brief, pp. 14-15). In response, the Examiner cites to Eisele's teaching that a processor may be used "to encrypt and decrypt data by transmitting plaintext data to [the] processor through the interface and back in encrypted form through this interface." (Action, p. 14) (citing to Eisele, col. 5 lines 12-24, Figs. 2-3). However, the fact remains that Eisele does not teach or suggest using a master encryption key to encrypt and decrypt data using one or more encryption keys. As such, the Examiner has not met the requisite burden of establishing a *prima facie* case of anticipation or obviousness against claim 2. Consequently, the rejection of claim 2 should not be sustained for at least these additional reasons.

Claim 10

Claim 10 recites “wherein the non-volatile magnetic memory is a magnetic random access memory.” Appellant’s Brief of March 29, 2010 submits that Eisele does not teach or suggest a magnetic random access memory anywhere. In response, the Answer cites to the magnetic disk or medium taught by Eisele which uses a magnetic head to write and read data from the magnetic disk or medium. (Action, pp. 14-15) (citing to Eisele, col. 4 lines 24-28).

In this regard, Appellant respectfully submits that it will be readily apparent to those having skill in the art that a MRAM is different in both structure and operation from a magnetic read/write head operating with a magnetic medium. Furthermore, the meaning of words used in the claims is determined by the meaning given to those words in the specification. *Markman v. Westview Instruments*, 116 U.S. 1384, 38 USPQ2d 1461 (1996); *McGill, Inc. v. John Zink Co.*, 736 F.2d 666, 674 (Fed. Cir. 1984); *ZMI Corp. v. Cardiac Resuscitator Corp.*, 884 F.2d 1576, 1580, 6 USPQ2d 1557, 1560-61 (Fed. Cir. 1988) (“words must be used in the same way in both the claims and the specification”). Appellant’s Specification is quite clear in describing an MRAM as a device which is functional and structurally incompatible with the magnetic read/write head device taught by Eisele. (Appellant’s Specification, p. 5 lines 1-3, p. 10 line 6 to p. 13 line 7).

As such, the Examiner has not met the requisite burden of establishing a *prima facie* case of anticipation or obviousness against claim 10. Consequently, the rejection of claim 10 should not be sustained for at least these additional reasons.

Claims 11-13

Claim 11 recites “wherein the second non-volatile memory is partitioned into first and second areas, and wherein the encrypted encryption keys are stored in the first areas and the

encrypted data is stored in the second areas.” Claim 12 recites “wherein the second non-volatile memory is partitioned into first and second areas, and wherein the encrypted encryption keys and the encrypted data are stored in the first areas.” Claim 13 recites “wherein the second non-volatile memory is partitioned into first and second areas, and wherein the encrypted encryption keys are stored in the first areas and the encrypted data is stored in the first and second areas.” Appellant has previously submitted that Eisele does not teach or suggest such partitioning. (Appellant’s Brief of March 29, 2010, pp. 16-17).

In response, the Answer contends that because Eisele teaches “load[ing] the element’s memory units with one or more cryptographic algorithms, secret codes etc. in a way that cannot be reproduced” and that “it is possible to store parts of these or the whole programs in the elements processors,” Eisele teaches or suggests the partitioning of the non-volatile memory as recited in claims 11-13. (Answer, pp. 15-16). Appellant respectfully disagrees. As will be readily apparent to those having skill in the art, the storage of all or part of an algorithm or encryption key in a processor does not teach or suggest the partitioning of a non-volatile memory into first and second areas or the assignment of encryption keys and encrypted data to those areas. In making this rejection, the Examiner is again unfairly reading subject matter from Eisele that simply is not there.

As such, the Examiner has not met the requisite burden of establishing a *prima facie* case of anticipation or obviousness against claims 11-13. Consequently, the rejection of claims 11-13 should not be sustained for at least these additional reasons.

Claims 14-15

Claim 14 recites “wherein the first areas are located at one or more predetermined address locations within the second non-volatile memory.” Claim 15 recites “wherein the first areas are located at one or more random address locations within the second non-volatile memory.” In this regard, the Action and Answer merely cite to the same portion of Eisele which teaches that data can be encrypted on a removable storage device and that different portions of a program may be executed by a host device and a processor in a removable storage device. (Action, p. 8) (citing to Eisele, col. 5 lines 20-30). It will be readily apparent from a careful reading of this portion of Eisele that the Action has failed to identify any teaching in Eisele concerning the address locations of the “first areas” recited in claim 13.

As such, the Action has failed to meet its burden of demonstrating the *prima facie* anticipation or obviousness of claims 14-15 with regard to Eisele. Consequently, the rejection of claims 14-15 should not be sustained for at least these additional reasons.

In view of the foregoing, it is again submitted that the final rejection of the pending claims is improper and should not be sustained. Therefore, a reversal of the Rejection of November 27, 2009 is respectfully requested.

Respectfully submitted,

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